

# Two new giant carnivorous land snails of the genus *Euglandina* (Gastropoda: Pulmonata: Spiraxidae) from Honduras

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## ABSTRACT

Two giant species of the genus *Euglandina* are described from Honduras. Both have very restricted distributions at intermediate elevations on Cerro Santa Barbara. They belong to a species group that includes five other remarkably large species from Mexico and Central America.

*Additional Keywords:* New species, pulmonate, Central America, Cerro Santa Barbara

## INTRODUCTION

The Spiraxidae is a large family of carnivorous land snails found in tropical America and Mediterranean Europe. *Euglandina* is a diverse genus. It is distributed from the southern United States to Bolivia. Forty-four species are recognized in Mexico and Central America, but this is undoubtedly an under-measure of the taxonomic diversity of the genus, because most of the region remains poorly explored for its molluscan fauna. Species vary in size from the minute—*Euglandina* (*Guillarmodia*) *brachystyla* Thompson, 1995, which reaches a length of 6.4 mm, to the gigantic and ponderous *Euglandina* (*Euglandina*) *titan* Thompson, 1987, which attains a length of 112 mm. Giant species of *Euglandina* comprise a group of extraordinary large species within the subgenus *Euglandina* from Mexico and Central America (Thompson, 1987). These include *E. sowerbyana sowerbyana* (Pfeiffer, 1846), *E. sowerbyana estephanae* (Strebel, 1875), *E. gigantea* Pilsbry 1926, *E. aurata* (Morelet, 1849), *E. titan* Thompson, 1987, *E. pan* Thompson, 1987, and *E. vanuxemensis* (Lea, 1834). On the basis of color patterns, which consist of incremental, rust-colored flames and granular sculpture, it appears that the first five species comprise a natural group. The last species is more distantly related.

Giant *Euglandina* species are seldom found, judging by the few specimens that have made their way into malacological collections and on the basis of my field experiences. Relatively few specimens are available for taxonomic analysis, and seldom are more than one or

two specimens available from any single locality. The discovery of two new giant species from Honduras is worthy of notice. Molluscan surveys of selected regions of Honduras were made by the author during 1993–1995. The two new species were found on only a few occasions, and these were from very restricted localities on Cerro Santa Barbara, a mountain massif reaching 2700 m in altitude and consisting mostly of karst limestone. The mountain has steep slopes on all sides making access to higher elevations very difficult. Much has yet to be learned about the molluscan fauna of there, as well as of higher elevations elsewhere in Honduras.

No Central American country can be described as well-known malacologically. Certainly Costa Rica has the best documented fauna, and Honduras has the least. Most areas in Honduras remain poorly explored for mollusks. Only two other species of *Euglandina* are known from there, *E. (Singleya) carminensis* (Morelet, 1849) and *E. (Cosmonemus) cumingi* (Beck, 1837) (Thompson, 2011).

This study is prompted by the necessity to make known two extraordinary species of land snails, and add to our knowledge of the Honduran fauna.

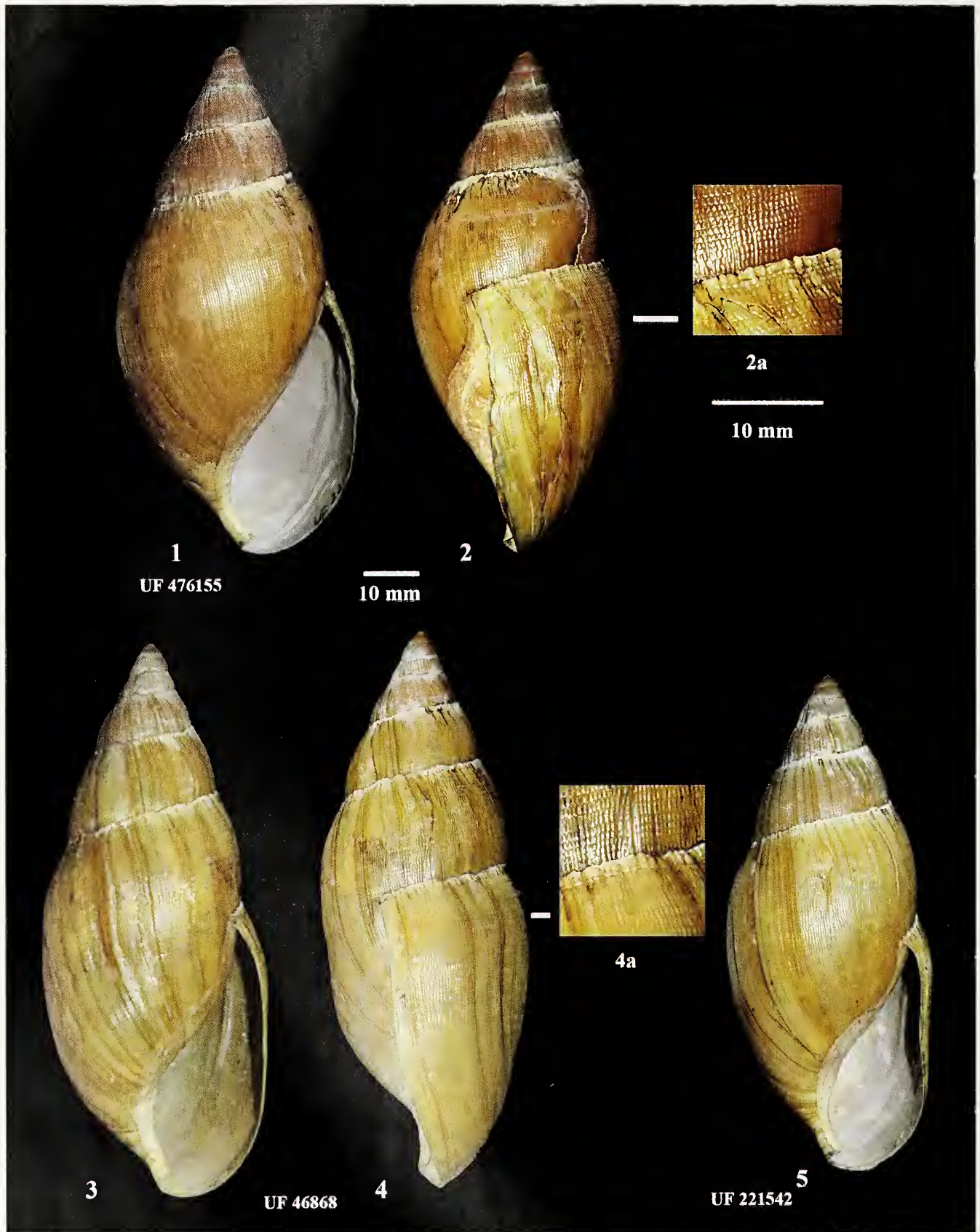
## MATERIALS AND METHODS

Specimens are deposited in the Malacology Collection at the Florida Museum of Natural History (UF). Measurements are standard. The shell length (SL) is from the apex to the base of the peristome parallel to the shell axis. The shell width (SW) is the widest part of the shell perpendicular to the shell axis. The aperture height (ApH) is the length of the aperture in a plane parallel to the shell axis. The number of whorls (Wh) is counted from the initial suture of the first whorl of the protoconch to the outer peristome.

## SYSTEMATICS

*Euglandina* (*Euglandina*) *hyperion* new species  
(Figures 1–2, Table 1)

**Diagnosis:** Giant species of the subgenus *Euglandina* with elongate-ovate shell up to 92 mm long and up to



Figures 1–5. New species of *Eucladina*. 1, 2. *Eucladina hyperion* new species. Holotype, UF 476155. 3–5. *Eucladina encladus* new species. 3–4. Holotype, UF 488668. 5. Paratype, UF 221542. Shell measurements in Tables 1, 2.



**Table 1.** *Euglandina hyperion* new species. Shell measurements of holotype (UF 476155) and three paratypes, all from type locality (San Luís de Planes); m alt = altitude in meters, other abbreviations explained in Materials and Methods.

Specimen	m alt	SL	SW	ApH	Wh	SW/SL	ApH/SL
Holotype	1300	92	45	47	7+	0.49	0.51
UF 221084	1300	82	38	44	8.0	0.46	0.54
UF 221056a	1400	82	38	46	7.9	0.46	0.55
UF 221056b	1400	79	38	45	7.8	0.48	0.57

**Table 2.** *Euglandina encladus* new species. Shell measurements of holotype (UF 468668), two paratypes (UF 221542), and a specimen from 3 km west of Nueva Esperanza (UF 194565). Abbreviations explained in Materials and Methods.

Specimen	SL	SW	ApH	Wh	SW/SL	ApH/SL
Holotype	93	38	48	7.3	0.41	0.52
Paratype	86	39	47	7.2	0.46	0.55
Paratype	84	35	42	7.2	0.42	0.50
UF 194565	84	36	44	7.3	0.43	0.52

8.0 whorls separated by moderately impressed suture. Shell light golden-brown with slightly darker spire and narrow white sub-sutural zone demarcating crenulate sculpture bordering suture. Suture crenulated with enlarged white denticles. Shell surface sculptured with fine incremental growth threads crossed by spiral striations, producing vertically elongate granular tubercles about as high as wide. Aperture about half shell length, with short, strongly flexed columella.

**Description:** Shell moderately thick-walled and opaque, large, up to 92 mm long and 0.46–0.49 times as wide as long. Shell longate-ovate with straight-sided spire and tumid body whorl. Shell color light-brown, with occasional darker streaks along fracture zones and irregular, narrow white sub-sutural zone. Upper whorls darker. Aperture interior livid-white. Whorls 7.8–8.0. Protoconch smooth, slightly raised, consisting of 2.2 whorls only weakly differentiated from teleoconch. First protoconch whorl raised. Whorls separated by strongly impressed suture, distinctly arched. Protoconch smooth. First teleoconch whorl with regularly spaced, weak axial threads that become stronger costae on subsequent whorls where they are decussated by sharp incised spiral striations to produce vertically elongate granules slightly higher than wide (Figures 1, 2). Granules strongest above whorls periphery, becoming slightly smaller toward base. Along suture, clusters of 2–3 costae become enlarged and coalesce forming strong, irregularly spaced and irregularly sized white denticles that crenulate the suture (Figure 2a). Band of denticles not demarcated from incremental costae by an impressed spiral groove along their bases. Aperture relatively narrow and sinuous, widest near base, aperture length 0.51–0.57 times

shell length. Parietal wall nearly straight, weakly concave in outline. Parietal callus thin, translucent white. Outer lip nearly uniformly arched. In lateral view, outer lip slightly arched forward below periphery (Figure 2). Columella relatively short and strongly twisted at about 20–30° to shell axis, extending slightly forward.

**Type Material:** Holotype: UF 476155; collected 3 March, 1994 by Fred G. Thompson. Paratypes: UF 221084 (3 specimens), all from type locality; UF 221056 (2 specimens), a heavily forested limestone sink 2.5 km southeast of San Luís de Planes, 1400 m alt., collected 2 March 1994 by Fred G. Thompson and Steven P. Christman.

**Type Locality:** Honduras, Dept. Santa Barbara, San Luís de Planes (14.9833° N, –88.1333° W); 1300 m alt.

**Other Localities:** Honduras, Dept. Santa Barbara, north slope of Cerro Santa Barbara, 4 km south of San Luís de Planes, 1700 m. alt. 3 March 1994 (UF 221717 - a single specimen was accidentally crushed by the author when stepped on).

**Distribution:** Honduras, known only from the vicinity of the type locality between 1300–1700 m alt.

**Comparisons:** *Euglandina (E.) gigantea* Pilsbry, 1926 from Costa Rica is similar in shape and in size. It measures up to 90 mm long with up to 7.3 whorls. The apical whorl is flat, revolving in a plane, not elevated as in *E. hyperion* new species. The color of the shell is light-orange with irregularly spaced longitudinal dark orange streaks. The suture is bordered by a band of nearly uniformly sized elongate denticles that weakly crenulate the suture. The decussated axial sculpture consists of granules that are nearly as wide as high. The denticles along the suture are separated from the sculpture below by a weakly impressed spiral groove. The aperture is more elongated, 0.57–0.68 times the shell length (see Thompson, 1987).

*Euglandina sowerbyana sowerbyana* from eastern Mexico has an elliptical-ovate shell with a convex spire. The subspecies *E. sowerbyana estephaniae* differs from *E. s. sowerbyana* and *E. hyperion* by its slenderer form and smaller size.

*Euglandina aurata* from Guatemala also is smaller and slender, has a weakly beaded suture and a nearly vertical columella. *Euglandina titan* from Guatemala is a very large obese species with nearly smooth incremental threads that are not decussated by spiral sculpture, and has minute beads that weakly crenulate the suture. *Euglandina hyperion* new species is similar to the following species, as discussed below.

**Etymology:** The species name, a noun in apposition, honors *Hyperion* (Ἥπείριον), a Titan god, son of Gara and Uranus, from the Classical Greek mythology.

***Euglandina encladus* new species**

(Figures 3–5)

**Diagnosis:** Giant species up to 93 mm long, 0.42–0.46 times as wide as long, and elongate-elliptical in shape, with up to 7.3 whorls forming straight-sided spire. Whorls separated by deeply impressed suture. Color light-brown with irregularly spaced, rust-colored streaks and irregular, narrow white zone bordering suture. Sculpture of axial growth threads decussated by spiral striations to form elongate beads twice as high as wide. Suture crenulated by relatively small white denticles. Aperture 0.50–0.55 times shell length. Columella nearly vertical.

**Description:** Shell is light brown in color with irregularly spaced rust-colored vertical streaks most pronounced on lower two or three whorls (Figures 3–4). Suture bordered below by irregular narrow white zone. Shell about 84–93 mm long in adult specimens, not ponderous in size, 0.41–0.46 times as wide as long. Shell gracefully elongate-elliptical with straight-sided spire. Body whorl not noticeably inflated. Mature specimens with 7.2–7.3 whorls and strongly impressed suture that descends gradually to aperture. Whorls mildly inflated and uniformly rounded between sutures. Protoconch of 3.5 smooth whorls weakly differentiated from teleoconch. First two protoconch whorls smooth. Subsequent whorl bears weak axial striations, which become progressively stronger. Teleoconch sculptured with incremental striations decussated by spiral striation to form elongate granules about twice as high as wide. Spiral striations nearly equally spaced. Decussated sculpture equally developed to base of last whorl. Below suture clusters of 2–3 incremental threads coalesce to form band of white denticles that crenulate suture (Figure 4a). Denticles irregular in size and spacing. Band of denticles not demarcated from sculpture below except in size. Aperture elongate-auriculate. Parietal margin strongly arched and with thin transparent callus. Columella truncated, short, and nearly vertical, lying at about 5–10° angle to shell axis, and weakly advanced at base. Peristome slightly arched forward in lateral profile (Figure 4).

**Type Material:** Holotype: UF 468668; collected 25 May 1994 by Fred G. Thompson. Paratypes: UF 221542 (9 specimens); UF 221546 (6 specimens), same data as the holotype.

**Type Locality:** Honduras, Dept. Santa Barbara, east slope of Cerro Santa Barbara 5 km northwest of San Jose de Los Andes (14.9167° N, –88.1° W), 2100 m alt.

**Other Localities:** Honduras, Dept. Santa Barbara: the east slope of Cerro Santa Barbara, above Las Quebradas, 3 km west of Nueva Esperanza (14.9333 N, –88.0 W), 1200 m alt. (UF 194565); Cerro Santa Barbara, 0.5 km east of Ocotillo (15.1828 N, –87.9583 W), 2100 m alt. (UF 194546, 194547). [Ocotillo is a small community on

the east slope of Cerro Santa Barbara. It is not to be confused with El Ocotillo, Dept. Francisco Morazán (13.8333 N, –87.25 W).]

**Comparison:** *Euglandina encladus* is similar to *E. hyperion*. It differs from the latter species by its elongate-elliptical shape, by having a deeply impressed suture, by its rust-colored streaked color pattern, by the sculpture of the teleoconch and by the development of the columella. The sculpture of *E. encladus* has elongate granules that are about twice as long as wide. The parietal margin of the aperture is arched into the aperture and the columella is longer and it is more nearly vertical. *Euglandina hyperion* is ponderous with about 7.7–8.0 whorls, has a tumid body whorl, a weakly impressed suture, and a nearly uniformly colored shell that does not have distinct rust-colored streaks. The granular sculpture is nearly as wide as long. The parietal margin of the aperture is very weakly curved and the columella is shorter and strongly curved.

**Etymology:** The specific epithet *encladus* (Ἐνκλάδης), honors the son of Gaia (Earth) and Uranus (Sky), a Giant from the Classical Greek mythology.

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